

REMARKS/ARGUMENTS

Claims 1-17 have been canceled. New Claims 18-38 are active in the case.

Reconsideration is respectfully requested.

The present invention relates to a process of preparing aqueous dispersions.

Claim Objection

The objections to Claims 4 to 17 are obviated by the amendments that have been made to the claims in the form of the new claims. Claim 8 has been canceled in favor of new Claims 25 and 26. Many of the amendments that have been made are to matters of form. Withdrawal of the objections is respectfully requested.

Claim Amendments

New Claim 38 finds basis in the claims and in the text such as page 8 where the core/shell particles are mentioned. None of the new claims are believed to have introduced new matter into the case. Entry of the new claims into the record is respectfully requested.

Claim Rejection, 35 USC 103

Claims 1-4, 8, 11-13, 16 and 17 stand rejected based on 35 USC 103(a) as obvious over Owens et al, U. S. Patent 3,793,402. This ground of rejection is respectfully traversed.

The Owens patent discloses an impact resistant thermoformable composition that is said to have improved stress whitening characteristics. The composition is based on poly(meth)acrylates which is comprised of 90 to 4 % by wt of a multi-stage core-shell particle with a hard core, an elastomeric first shell and a hard second shell. A typical constituency of the core and the second shell requires (lower)alkyl methacrylates. The first shell is formed on the hard core polymer material by the copolymerization of 50 to 99.9 wt %

of butadiene, substituted butadiene and an alkyl acrylate (col 7, lines 3- 25), and preferably contains from 10 to 25 wt % of styrene. Other components that are present are a cross-linker and a graftlinker. It is at this point that there is a material departure between the core/shell particle structure of the patent and that of the present invention where, after the core of the present particles is formed of cross-linked polymerized alkyl methacrylate, optionally with alkyl acrylate, a first shell layer is formed from a second composition that is comprised of 80.0 to 100.0 parts by wt of (meth)acrylates (optionally some styrene) and a cross-linking monomer. Finally, the second shell or outer shell is formed by the polymerization of alkyl methacrylate as is the case of the second outer shell of the present particles. Further, the Owens patent does not show or suggest the addition of aqueous monomer emulsions for polymerization, wherein the first stage of polymerization occurs in a seed latex. Clearly, the Owens patent does not suggest the core/shell structure of the polymer prepared by the presently claimed process and withdrawal of the rejection is respectfully requested.

Claims 1-4, 8-13, 16 and 17 stand rejected based on 35 USC 103(a) as obvious over Hofmann, U. S. Patent 4,180,529. This ground of rejection is respectfully traversed.

The Hofmann '529 patent discloses a multi-layered graft acrylic polymer that is comprised of an elastomeric core formed of cross-linked acrylate, a non-elastomeric, relatively hard second layer of a cross-linked methacrylate polymer, wherein the methacrylate monomer may be copolymerized with optionally another monoethylenically unsaturated monomer, a third layer of elastomeric polymerized alkyl acrylate with optionally another monoethylenically unsaturated monomer, and a fourth layer non-elastomeric, relatively hard alkyl methacrylate polymer, wherein the methacrylate monomer is optionally copolymerized with another monoethylenically unsaturated monomer. Example 1 of the patent shows that the multi-layered product of the patent is prepared by a process which in the first stage simply provides for the addition of monomers to be polymerized in the first stage along with an

emulsifier into water. For each stage of monomer polymerization, monomer material is simply added to the polymer emulsion as it is produced along with emulsifier. On the other hand, as claimed in the present invention, the first stage of monomer material which forms the core, is added to a polymer seed latex, wherein the polymer seed particles are of the stated particular size range. After polymerization of the alkyl methacrylate monomer in the first stage, the second layer and subsequent layer are formed by the addition of monomer emulsion to the polymerized previous stage material. Thus, the present process of forming multi-layered core/shell particles is completely different from that of the patent so that the present polymer dispersion is not obvious in view of the disclosure of '529. Withdrawal of the rejection is respectfully requested.

Claims 5 and 7 stand rejected based on 35 USC 103(a) as obvious over Hofmann or Owens in view of Takarabe et al, U. S. Patent 4,914,142. This ground of rejection is respectfully traversed.

Claims 5 and 7 are directed to the aspects of the initial charge of the present process of an aqueous emulsion of an alkyl alcohol or a seed latex. As shown above, neither of the two primary references discloses the addition of an aqueous monomer emulsion to an aqueous seed latex in order to initiate the monomer polymerization necessary to form a core particles of a multi-layered product. Takarabe et al does not improve upon this deficiency because in the context of the invention described therein, the seed particles are relatively massive to the particles of the present seed which have a particle size range of 3.0 to 20.0 nm. Withdrawal of the rejection is respectfully requested.

Claim 6 stands rejected based on 35 USC 103(a) as obvious over Hofmann or Owens in view of Takarabe et al, U. S. Patent 4,914,142 and further in view of De Witt. This ground of rejection is respectfully traversed.

The disclosures of the Hofmann, Owens and Takarabe et al patents are traversed for the reasons discussed above. The disclosure of De Witt describes polymer seed particles which are said to have a size ranging from about 200 to about 2000 Å (20 to 200 nm). This particle size range simply does not suggest the seed latex particle size radius of the present claims of 3 to 20 nm. Accordingly, the cited combination of patents does not suggest the present invention and withdrawal of the rejection is respectfully requested.

Claim 14 stands rejected based on 35 USC 103(a) as obvious over Hofmann or Owens in view of Falk et al, U. S. Patent 4,542,179. This ground of rejection is respectfully traversed.

The subject matter of Claim 14 is directed to a secondary aspect of the invention upon which patentability of the invention does not depend. Accordingly, in view of the dependency of the claim on a patentably distinguishable claim, it is believed to be patentable also. Withdrawal of the rejection is respectfully requested.

Claim 15 stands rejected based on 35 USC 103(a) as obvious over Hofmann or Owens in view of Shah et al, U. S. Patent 5,777,034. This ground of rejection is respectfully traversed.

The subject matter of Claim 15 is directed to a secondary aspect of the invention upon which patentability of the invention does not depend. Accordingly, in view of the dependency of the claim on a patentably distinguishable claim, it is believed to be patentable also. Withdrawal of the rejection is respectfully requested.

Appln. No. 10/539,132
Reply to the Office Action of September 18, 2007

It is now believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

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